Reading Three Landscapes in the 19th Century American West

This paper will examine the 19th century American Western landscape using a body of method and theory called 'landscape history' which provides an alternative to established approaches.[1] Hitherto the Western landscape been examined principally by two schools: Cultural Resource Management (CRM) practitioners and particular historical geographers, notably Donald Meinig, JB Jackson and John Stilgoe.[2] The former are primarily concerned with identifying important landscapes for registration and conservation. They define landscapes as bounded areas containing multiple functionally-linked components which were created by human interaction with the environment.[3] This definition aids evaluation against National Register of Historic Places criteria. Landscape history also views landscape as comprising a range of components arising from human action but parts company with CRM practitioners on the issues of boundaries and linkage.[4] This is because it examines human behavior which takes place across a number of different landscapes in the CRM sense, and because, although only fragments of landscapes of any particular period survive in the present, in the past the cultural landscape was continuous. The boundaries of our case study areas have therefore been selected arbitrarily and do not necessarily contain single functionally coherent landscapes. Historical geographers also agree that landscapes are the product of human-environment interaction and contain a variety of different components. In common with landscape history they view landscapes as the spaces which individuals or communities used routinely.[5] Landscape history differs from historical geography because of the information it seeks. Historical geographers, especially Jackson and Stilgoe, focus on reading philosophical, cultural and religious

[1] D. W. Meinig, *The Interpretation of Ordinary Landscapes: Geographical Essays* (New York: OUP USA, 1979).
[2] John R. Stilgoe, *Common Landscape of America, 1580-1845* (New Haven: Yale University Press, 1983); Meinig, *The Interpretation of Ordinary Landscapes*; John B. Jackson, *A Sense of Place, a Sense of Time* (New Haven: Yale University Press, 1996).
[3] California Department of Transportation, *General Guidelines for Identifying and Evaluating Historic Landscapes* (Sacramento, CA: California Department of Transportation, 1999); Melnick, *Cultural Landscapes*, 2; https://www.nps.gov/nr/publications/bulletins/nrb30/ accessed April 28 2019.
[4] California Department of Transportation, *General Guidelines for Identifying and Evaluating Historic Landscapes*, 2; https://www.nps.gov/nr/publications/bulletins/nrb30/ accessed April 28 2019.; Melnick, *Cultural Landscapes*.
[5] Jackson, *A Sense of Place, a Sense of Time*, 159.

values from landscapes.[6] This work is largely theoretical; leaving empirical confirmation to later scholars.[7] It was mainly thematic; analyzing a particular feature across a region or nation.[8] Landscape history focuses on particular places and uncovers the actions that created their landscape, and thus the ways in which people used their environment. Meinig highlighted these differences, and while seeing merit in both, suggested that applying landscape history to America would tell us much about 'landscape's greater meaning'.[9] This paper will deal exclusively with landscapes termed 'vernacular landscapes' or 'rural historic landscapes' by CRM practitioners and historical geographers.[10] Such landscapes developed from quotidian activities associated with making a living, particularly agriculture. These are the landscapes of greatest interest for Western History.

The landscape components examined here differ somewhat from the eleven characteristics/components recognized by CRM practitioners recognize but overlap with them in some respects.[11] Settlements are one type of component and may be either dispersed or nucleated. Nucleated settlements, in CRM terms a type of 'cluster',[12] are groups of houses and related structures, and include villages, hamlets and towns. In this paper 'town' will be used to refer to all nucleated settlements, as this term is more familiar the West. Dispersed settlement is a pattern in which houses have wide spaces between them. In CRM terms dispersed settlement a 'pattern of spatial organization' comprised of 'buildings'.[13] In the West this consists of farms, which are primarily agricultural, and ranches which are practice stock-growing. Routeways, such as 'roads' and 'tracks', are also landscape features, and to CRM practitioners are a type of 'circulation network'.[14]

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[6] I. San Martin, "Reflections on the Cultural Landscape: Conflicting Results in the American Production of Space," *Journal of the Southwest* 45, no. 1/2 (2003): 200; Meinig, "Reading the Landscape", 211.
[7] Meinig, "Reading the Landscape", 233.
[8] Meinig, 211–36.
[9] Meinig, 235.
[10] Meinig, *The Interpretation of Ordinary Landscapes*, 228; California Department of Transportation, *General Guidelines for Identifying and Evaluating Historic Landscapes*, 2; https://www.nps.gov/nr/publications/bulletins/nrb30/ accessed April 28 2019.
[11] McClelland, L.F., Keller, J.T., Keller, G.P. and Melnick, R.Z. *Guidelines for Evaluating and Documenting Rural Historic Landscapes* (Washington DC: National Parks Service).
[12] McClelland *et al. Guidelines for Evaluating and Documenting Rural Historic Landscapes*, 6.
[13] McClelland *et al. Guidelines for Evaluating and Documenting Rural Historic Landscapes*, 4-5.
[14] McClelland *et al. Guidelines for Evaluating and Documenting Rural Historic Landscapes*, 5.

Roads carry more traffic than tracks and are more substantially constructed. Tracks are smaller and may be nothing more than paths worn by long use, though some are improved. Watercourses are also important landscape features and do not fit clearly into any one CRM component type. In some cases, these are made by humans for irrigation, in which case we will refer to them as 'ditches'. Others, 'rivers', 'streams' and 'creeks', are natural.

From the Western History perspective, landscape history could reveal much information pertinent to important topics. Reading the landscape makes it an historical source: one which is useful for the local approaches advocated by some Western historians.[15] Cronon and Gitlin, for instance, argued that local life is linked to larger historical processes and that we should examine the interplay of local and global interests.[16] Some local topics are especially important. For instance, White argued that federal government influence, especially over land, is a key feature of the West.[17] As this influence was exercised locally, a local approach may be revealing.

To sum up, landscape is a product of human activity in a particular place. In contrast to CRM practitioners, we do not see landscapes as discrete bounded entities but as a continuous layer of human modification across any inhabited place. The routine experience of the inhabitants of an area is central to our approach. Our primary focus is on activity rather than cultural, philosophical or religious values. Such values are important but we wish to reach them via a detailed understanding of what people did within their landscape.

We will explore these ideas using Colorado as a test-case. Some scholars have examined Colorado on a regional scale, providing an outline of its development, but omitting important detail available on a local scale. Immediately before Anglo-American occupation Colorado was broadly divided between

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[15] San Martin, "Reflections on the Cultural Landscape," 29.
[16] W. Cronon, G. Miles, and J. Gitlin, "Becoming West: Toward a New Meaning for Western History," in *Under an Open Sky: Rethinking America's Western Past*, eds. W. Cronon, G. Miles, and J. Gitlin (New York: W.W. Norton and Company, 1993), 7–8.
[17] R. White, *It's Your Misfortune and None of My Own: A New History of the American West* (Norman, OK: University of Oklahoma Press, 1993), 137.

the Utes in the mountains and the Cheyenne and Arapaho on the plains along with the Kiowa and Comanche in the south-east and the Shoshones in the north-west.[18] All were hunter-gatherers and traded with and raided Hispanic settlements to the south. The earliest significant Anglo-American activity was by fur trappers and traders during the fur-boom 1820s-30s,[19] who built forts, particularly on the Arkansas.[20] When the beaver fur trade collapsed in the 1840s many forts were abandoned.[21] Contemporaneously, settlement foci developed on the Arkansas, San Luis and South Platte Valleys.[22] In the south of the state, including the San Luis Valley, Hispanic settlement began in the 1830s with grants made by Mexico. These were irrigated for mixed agriculture.[23] Discoveries of gold and silver in Colorado from 1858, and especially in 1878 at Leadville, were a turning point in the history of the State.[24] Mining camps proliferated and provided a market for agricultural produce.[25] The Plains developed agriculture and ranching. From 1859 cattle were trailed to Denver and onward to Cheyenne. The arrival of railroads from 1870 eased the marketing of cattle and agricultural produce to the east, and towns developed on the plains to serve farmers.[26] As more settlers arrived, conflict with Native Americans increased and led to the exile of first the Cheyenne and Arapaho and then most of the Utes. The Cheyenne and Arapaho were removed to Oklahoma in 1868-1870,[27] and the Ute reservation abolished in 1881. This allowed ranchers to exploit the mountains more intensively, building ranches and towns. The late 1880s and early 1890s saw an influx of settlers during one of

[18] J.D. Hughes, *American Indians in Colorado* (Boulder, Colo: Pruett Pub Co, 1987), 75.
[19] F.J. Athearn, *An Isolated Empire: a History of Northwest Colorado* (Denver: Bureau of Land Management, 1977), 21-26; F.J. Athearn, *Land of Contrast: a History of Southeast Colorado* (Denver: Bureau of Land Management, 1985), 27-28; R.A. Murray, *Las Animas, Huerfano, and Custer three Counties on a Cultural Frontier: a Narrative History of the Raton Basin* (Denver Bureau of Land Management, 1978), 22-27.
[20] Athearn, *Isolated Empire*, 21; S.F. Mehls, *The New Empire of the Rockies: a History of Northeast Colorado* (Denver: Bureau of Land Management, 1984), 23.
[21] Athearn, *Land of Contrast*, 27-28.
[22] W. Wyckoff, *Creating Colorado: the Making of a Western American Landscape, 1860-1940* (New Haven: Yale University Press, 1999), 37.
[23] Wyckoff, *Creating Colorado*, 40.
[24] Wyckoff, *Creating Colorado*, 61; Duane A. Smith, *Rocky Mountain Mining Camps: The Urban Frontier* (Bloomington: Indiana University Press, 2017), 45.
[25] Athearn, *Land of Contrast*, 52.
[26] Athearn, 99-103.
[27] Athearn, 77-78; Mehls, *The New Empire of the Rockies*, 43.

the period dry-farming booms on the Western plains.[28] This was ended by dry years in 1890-1891 and the 1893 Panic. The Panic influenced mining but major new discoveries notably at Cripple Creek allowed it to continue.[29]

Archaeological studies of individual sites or settlements have provided useful insights but omit information that can be gleaned from areas between them. Pickrell compared Boggsville and Las Animas City.[30] Boggsville developed from a sheep ranch, owned by a Vigil-St. Vrain grant claimant. Las Animas City was built to serve Fort Lyon. She found that family ties were used to acquire land at Boggsville but not Las Animas City, and that the latter was structured around race, the former around class. Clark compared two culturally distinct sites in the Arkansas Valley; La Placita and Wild Plum.[31] La Placita contained a 'square' and had evidence of hunting and gathering, gardening and market-orientated stock-raising, while Wild Plum's economy was more restricted. Finally, Church used two sites to examine local interaction with land laws.[32] She found that Anglo-Americans were more likely to homestead alone while Hispanic-Americans settled in family groups. Her Anglo-American Riley site had a more specialized economy and used more fencing, while Roybal had upland grazing and irrigated cropland.[33]

These studies add to our understanding of the inhabitation of Colorado during the 19th century, but do not examine in detail non-settlement landscape features, such as field systems and roads. The spaces between sites are an important part of the human experience of a place and form a system together with the settlements.

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[28] Athearn, *Land of Contrast*, 146; Mehls, *The New Empire of the Rockies*, 73-74.
[29] S.F. Mehls, *The Valley of Opportunity: a History of West-Central Colorado* (Denver: Bureau of Land Management, 1982), 172; Mehls, *The New Empire of the Rockies*, 74; P.M. O'Rourke, *Frontier in Transition: a History of Southwestern Colorado* (Denver: Bureau of Land Management, 1980), 100; Wyckoff, *Creating Colorado*, 112.
[30] J.E. Pickrell, "Borderland Identities and National Formation of the American West: An Archaeological Study in the Arkansas Valley, Colorado" (PhD diss., University of Pennsylvania, 2012).
[31] B.J. Clark, *On the Edge of Purgatory: An Archaeology of Place in Hispanic Colorado* (Lincoln: University of Nebraska Press, 2011).
[32] M.C. Church, "The Grant and the Grid," *Journal of Social Archaeology* 2, no. 2 (2002): 220–44.
[33] Church, "The Grant and the Grid", 229.

To put landscape history into practice it is useful to have maps of a range of dates of the area under examination. In the American West this need is met by the Public Land Survey System (PLSS) plats and the United States Geological Survey (USGS) Topo maps.[34] These were used for map regression, in which the earlier and later maps were compared.[35] Some issues must be considered. The PLSS plats are particularly problematic. They were produced by government-contracted surveyors and used for transferring public land to individuals. Each covered a 36 square-mile township, subdivided systematically to allow easy location of lots.[36] These plats are very inconsistent. Some surveyors recorded particular types of feature while others did not. For instance, some marked only the portions of streams or roads which crossed survey lines while others marked their entire length. Surveyors probably omitted minor tracks and some buildings and the extent of these omissions likely differs between plats. In addition, neighboring townships were sometimes surveyed at different times and so represent different stages of landscape development. USGS maps are less troublesome, though they omit some features such as field boundaries. Some large-scale maps of Colorado; notably the commercially produced Nells and Crofutt maps, were also used.[37] The Nells maps are partly based on the PLSS and so repeat their problems. The Hayden maps which were surveyed between 1874 and 1876 provide some information on the pre-PLSS landscape.[38]

[34] https://viewer.nationalmap.gov/basic/#productSearch accessed December 31, 2018; https://glorecords.blm.gov/search/default.aspx?searchTabIndex=0&searchByTypeIndex=1 accessed December 31, 2018.
[35] M.A. Aston, "Maps, a Prospect and the Later Watercolours," in *The Shapwick Project, Somerset: A Rural Landscape Explored*, eds. C.M. Gerrard with M.A. Aston (Leeds: Society for Medieval Archaeology, 2007), 44–74.
[36] H.B. Johnson "Towards a National Landscape" in *The Making of the American Landscape* ed. M.P. Conzen (New York: Routledge, 1990), 127-145.
[37] Denver Public Library (DPL) CG4310/1881.N4; DPL CG4310/1880.N4; DPL CG4310/1882.N4; DPL CG4310/1883.N4; DPL CG4310/1884.N4; DPL CG4310/1885.N4; DPL CG4310/1887.N4; DPL CG4310/1885.C76/1966.
[38] F.V. Hayden, *North-Western Colorado and Part of Utah. U.S. Geological and Geographical Survey of the Territories. F.V. Hayden in Charge. S.B. Ladd, G.R. Bechler, H. Gannett and G.B. Chittenden, Topographical Assistants. Surveyed in 1874 & '76. Sheet V* (Washington DC: US Department of the Interior, 1881).

These maps were manipulated using GIS. Digital copies of the PLSS plats were downloaded from the Bureau of Land Management (BLM) website,[39] and georeferenced in QGIS using shapefiles of the township grids.[40] Features on the plats were transcribed into polyline shapefiles with attributes distinguishing different types such as roads, watercourses etc. Textual labels and buildings were transcribed into point shapefiles. Features crossing several townships were joined when it was certain that they represented the same feature. Georeferenced digital copies of USGS quads were downloaded from the USGS website and similarly transcribed into shapefiles. The transcribed data could then be overlaid on either of the two types of plan in order to identify differences between them, or over georeferenced photographs of the larger-scale maps. It is impossible to georeference so precisely that all features are in exactly the same position on each map and consequently the identifications are somewhat subjective.

Land patents, issued when public lands were alienated, were also used.[41] These alienations occurred by several processes, most frequently by sale, though also by pre-emption, homesteading and other methods.[42] Patents indicate where people were settling, but this picture is only partial as squatting was common. Also, the patents only record the initial alienation of the land by the government not subsequent sales, exchanges or abandonment. Consequently, the accretion of patents does not show an area filling with settlers: many parcels were probably quickly sold to new settlers or neighbors, or abandoned.

The patents describe the land in relation to the PLSS grid and give a number relating to Master Title Plats (MTPs) which map all patents within a township.[43] Usually the land can be located using the

[39] https://glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 accessed July 19, 2019.
[40] https://navigator.blm.gov/data?keyword=PLSS&fs_publicRegion=Colorado accessed July 19, 2019.
[41] https://glorecords.blm.gov/search/default.aspx?searchTabIndex=0&searchByTypeIndex=1 accessed December 31, 2018.
[42] J. Opie, *The Law of the Land: Two Hundred Years of American Farmland Policy* (Lincoln: University of Nebraska Press, 1994).
[43] https://glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 accessed July 19, 2019.

description but sometimes the MTPs must be used. MTPs were downloaded from the BLM website and georeferenced in the same way as the survey plats. This permitted the patents to be mapped in a polygon shapefile with details including date and patentee's name recorded as attributes. This allowed easy comparison of the map data with the patent dataset.

Three case study areas were used: one in Baca County, another in Rio Grande County and another in Rio Blanco County (Figure 1). The Baca Case study is on the eastern plains, south of the Arkansas River and on the state line with Kansas and Oklahoma. Its PLSS was made between 1881 and 1884.[44] It is covered by two USGS quads: Albany (1893) and Villas (1892).[45] The Rio Grande case study is in the south of the state, on the edge of the Rocky Mountains. The Rio Grande flows through the county north-west to south-east meeting the San Luis Valley in the east of the study area. This was part of Mexico until the Mexican-American War (1846-8), and from 1833 part of the Conejos Grant. In 1900 the United States Court of Private Land Claims, which adjudicated land title within the captured territory, refused to confirm the grant.[46] The PLSS was made between 1873 and 1882.[47] Most of the study area is on the 1915 USGS Del Norte quad, but a small section in the south was on the 1922 Conejos quad.[48] The Rio Blanco case study is in the north-west Colorado in the mountains. Meeker, the county seat, is in the study area, and the White River runs east-west through it. IT was within the Ute Reservation between 1868 and 1881. Conflicts between the Utes, Agency staff, especially the agent Nathan Meeker, and ultimately the US Army were used as a pretext to abolish the reservation in 1881. [49] Most of the PLSS occurred 1883-1884, but one township was surveyed in 1886 and another in 1891.[50] The area is covered by three USGS quads; White River (1907) in the

[44] https://glorecords.blm.gov/search/default.aspx?searchTabIndex=0&searchByTypeIndex=1 accessed December 31, 2018.
[45] https://viewer.nationalmap.gov/basic/#productSearch accessed December 31, 2018.
[46] http://newmexicohistory.org/people/los-conejos-grant accessed July 28, 2018.
[47] https://glorecords.blm.gov/search/default.aspx?searchTabIndex=0&searchByTypeIndex=1 accessed December 31, 2018.
[48] https://viewer.nationalmap.gov/basic/#productSearch accessed December 31, 2018.
[49] Marshall Sprague, *Massacre: The Tragedy at White River* (Lincoln: University of Nebraska Press, 1980).
[50] https://glorecords.blm.gov/search/default.aspx?searchTabIndex=0&searchByTypeIndex=1 accessed December 31, 2018.

north-west, Meeker (1912) in the north-east and Grand Hogback (1910) in the south-east. In the south-west, unfortunately, no map is available until 1952 which is too late to be relevant.[51]

These three case studies cover a range of Colorado landscapes including areas subject to intensive Native American and Hispanic occupation before significant Anglo-American settlement. No claim is made, however, that these landscapes are representative of the American West or even Colorado. They do, however, permit the exploration of the approach outlined above.

The examination of these landscapes revealed much information relating to their development during the late 19th century. The information can be broadly grouped into three topics: settlement, transportation, and fences and irrigation.

Settlements are present in all three case studies on both the PLSS and USGS. In Rio Blanco settlement on the PLSS is quite limited. This is unsurprising as the area had not legally been open to Anglo-American settlement until shortly before the survey. Settlement was entirely dispersed with large distances between houses. Three houses, labelled 'Hugh's Ranch', 'P.E. Wagner's House' and 'E. Allen's House', were mapped along streams north of the White River (Figure 2).[52] Another house appears on a stream south of, and another further west along, the White River.[53] A store and restaurant were beside the road past the former Agency site. By the USGS survey settlement had increased dramatically (Figure 2). The main differences between the PLSS and USGS settlement patterns are the construction of Meeker and the massive increase in dispersed farms in the valley bottom to its south. South-east of the town the farmsteads are distributed very evenly as only one occurs in each lot (Figure 3). Their distribution, however, shows a closer relationship with the PLSS roads than the USGS roads. To the north 'Hugh's Ranch' and 'P.E. Wagner's House' both survive,

[51] https://viewer.nationalmap.gov/basic/#productSearch accessed December 31, 2018.
[52]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=178693&sid=vprtk2dx.ppj#surveyDetailsTabIndex=1 accessed December 31, 2018.
[53]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=178995&sid=bpe1el0v.ir5&surveyDetailsTabIndex=1 accessed December 31, 2018;
https://glorecords.blm.gov/details/survey/default.aspx?dm_id=178685&sid=jsda3u3f.os2&surveyDetailsTabIndex=1 accessed December 31, 2018.

though on the USGS they are marked 'Valentine's Ranch' and 'Goff Ranch' respectively. 'E. Allen's' house however was abandoned before the USGS. Several other houses were built along these streams between the PLSS and USGS. Several houses were built on streams south of the White River (Figure 2). The USGS marked no settlement west of Powell's Park despite land having been patented there. It appears therefore that the development of Meeker had a significant effect on agricultural settlement; causing it to focus around the town. Aside from Meeker settlement remained dispersed.

Baca, conversely, experienced a period of intense nucleation between the PLSS and USGS surveys (Figure 4). The PLSS shows isolated houses across the area. All are situated on streams. The Cimarron in the south and Bear and Horse Creeks in the north attracted settlement, though their tributaries were also well used. Within ten years nearly all dispersed settlements had gone. Only three are marked on the USGS; the Miles Ranch which may represent continuity with a cabin on the PLSS, the Matthews Ranch, and an unnamed ranch, neither of which were on the PLSS. The USGS shows three very small towns; Minneapolis, Stonington and Plymouth (Figure 4). All three are in the north of the study area. These were commercial ventures; part of a town boom associated with dry farming.[54] Minneapolis was patented by Walter G. Hines in 1888.[55] Stonington was founded in 1887 by the Adams Town Company. Plymouth was founded the same year but much less formally as articles of incorporation were not filed.[56] The period between the two surveys represents a near-complete change in settlement pattern in most of the study area with the dispersed pattern only continuing in much-reduced form in the southernmost part.

Rio Grande is different again but shows greater similarity with Rio Blanco. It is the only case study to have nucleated settlement on the PLSS (Figure 5). Two nucleated settlements are marked; Del Norte

[54] M.F. Taylor "The Town Boom in Las Animas and Baca Counties" *The Colorado Magazine* 55, no. 2 and 3 (1978): 111-132.
[55]https://glorecords.blm.gov/details/patent/default.aspx?accession=COCOAA%20100029&docClass=SER&sid=sz5h0xwt.yho accessed December 31, 2018.
[56] Taylor "The Boom Towns in Las Animas and Baca Counties", 118-126

and a plaza. Both are on the Rio Grande, around ten miles apart.[57] Del Norte had only been platted in 1870 three years prior to the PLSS.[58] This is probably why the PLSS shows no actual features in the townsite.[59] The plaza is La Loma de San Jose, though the PLSS does not name it. This had been established in 1859 by Hispanic settlers. During the 1860s several other plazas spread out from it.[60] Interestingly, the PLSS marks none of them though they were certainly present in the 1860s. Loma and La Loma Del Norte are marked on the Nells maps and so certainly survived to the PLSS period.[61] The name of the latter is on the PLSS but as a hill, not a settlement, and one isolated house is also marked in the general area of three plazas but is not precisely on the site of any of them. It is possible that the PLSS surveyors were reluctant to depict significant Hispanic settlement here for fear of strengthening claims to the Conejos Grant which had yet to be adjudicated. Sevenmile Plaza and its neighbor Los Valdez are omitted by both the PLSS maps and Nells but are on the USGS discussed below. Piedra, which was built before 1873, was also omitted by the PLSS but is on the Crofutt map.[62]

Dispersed settlements cluster along the Pinos Creek and the Mountain Run stream. Most of these are labelled with Anglo-American names, specifically German, English and Irish.[63] Montoya's House at the confluence with the Rio Grande was built by an Hispanic settler in the mid-1860s.[64] Finally, four houses are marked in the hills in the south of the study area. Two are very isolated, while the

[57]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=180664&sid=kmfijfu0.djb&surveyDetailsTabIndex=1 accessed December 31, 2018; https://glorecords.blm.gov/details/survey/default.aspx?dm_id=180586&sid=kovd4pri.z10&surveyDetailsTabIndex=1 accessed December 31, 2018.
[58] V. McConnell-Simmons *The San Luis Valley: Land of the Six Armed-Cross* (Niwot: University Press of Colorado, 1999), 281.
[59]https://glorecords.blm.gov/results/default.aspx?searchCriteria=type=survey|st=CO|cty=105|twp_nr=40|twp_dir=N|rng_nr=6|rng_dir=E|m=23|styp=01 accessed July 22 2019.
[60] McConnell-Simmons *The San Luis Valley*, 289-90.
[61] Denver Public Library (DPL) CG4310/1881.N4.
[62] DPL CG4310/1885.C76/1966.
[63]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=180507&sid=fy1sphdn.2tx&surveyDetailsTabIndex=1 accessed December 31, 2018.
[64] McConnell-Simmons *The San Luis Valley*, 287.

other two, marked 'Louis E Alaird's House and Ranch' and 'A Myer's house', are together at the head of the Ratton Creek.[65]

The Nells and Crofutt maps show towns which developed between the PLSS and USGS periods. Venable developed as a stage station on the road between Alamosa and Del Norte, [66] while Lariat began as holding pens for livestock waiting to be shipped on the Denver and Rio Grande Railroad.

The USGS map shows much denser settlement, particularly along the Rio Grande and the San Luis Valley (Figure 6). Del Norte had become a major town, and had been joined by Monte Vista downriver. The latter had been founded by the Empire Farm Company in 1884 as part of a real-estate venture by Theodore C. Henry and had absorbed Lariat. Sevenmile Plaza is marked and consisted of a cluster of houses and a church. It is almost exactly on the site of La Loma Del Norte and it is likely that the name had simply changed. A cluster of houses and a church in an area patented by a Tomas Valdez is not named but is probably a settlement known as Los Valdezes. According to McConnell-Simmons, La Plaza de Don Hilario, built by Hilario Atencio, was to the north of this.[67] It is not marked on any maps examined here but two people called Atencio patented land in this area.

Dispersed settlement on the USGS is concentrated in the San Luis Valley in the east of the study area (Figure 6). These houses are nearly all immediately next to roads and consequently in straight lines. South of the Rio Grande these lines mostly run north-south while to the north they run in both directions indicating the important directions of travel. The distribution continues along the Rio Grande Valley but is less regular. All PLSS houses on the Pinos Creek are on the USGS as well as several others. Only one of the settlements on the Mountain Run survived to the USGS period. Some houses and a cemetery were also built on the San Francisco Creek. Settlements on the Rio Grande

[65]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=180578&sid=por2z5qh.iki&surveyDetailsTabIndex=1 accessed December 31, 2018.
[66] McConnell-Simmons *The San Luis Valley*, 161.
[67] McConnell-Simmons *The San Luis Valley*, 290, 293.

and its tributaries are mostly on patented land. In most cases there is one per lot though in a few cases there are several houses on one lot.

In the hills south of the Rio Grande, settlement had expanded by the USGS survey but was still sparse. Some clusters had formed on streams in this area, including one around the site of a cabin marked on the PLSS (Figure 6).

In short, the pattern of settlement on the USGS represents an intensification of the pattern shown on the PLSS aside from the development of dense dispersed settlement in the San Luis Valley. Nucleated settlements remained important throughout the period, though their failure rate was high and some were only ever very small. Some nucleated settlements are clearly from the Hispanic tradition but others were Anglo-American.

Transportation routes saw as much change as did settlement. We have already seen that transport routes effected settlement patterns. The dataset examined here permits examination of the influence of both local and long-distance routes.

In Rio Blanco the PLSS shows major east-west roads along the White River Valley, with which north-south roads converge (Figure 2). The road to the north of the river is mapped in Township 1 North 95 West of the 6th Principal Meridian but is not marked in the next township west, though this is probably an omission by the surveyor. The road on the south begins at Powell's Park. These roads join at Meeker and one road continues east to the north of the river. Two roads follow streams south and two follow streams north from points near Meeker. The northern pair lead to ranches in the mountains where they are joined by an east-west road which continues out of the study area in both directions. The two southern roads are not joined within the study area, though two trails, one marked 'Old Ute Trail', go east from the easternmost of the pair.[68] Towards the White River several

[68]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=178615&sid=qqpf5v3o.0hz&surveyDetailsTabIndex=1 accessed December 31, 2018.

small lengths of road provide short-cuts between the main roads or link particular things into the road network.

The USGS shows that the White River Valley remained an important routeway (Figure 2). The road on the northern bank had developed into the major long-distance route and parts had been straightened. The road on the southern side of the river had declined and some parts are marked as tracks not roads. Much of it had broken into sections to form routes into the main transport network rather than a long-distance route in its own right. Two of these sections had been turned north to join the northern road via a bridge. East of Meeker the roads became very straight with right-angle turns. Several roads had been added joining isolated houses into the road network. Both of the roads north from Meeker are on the USGS and serve ranches in this area. However, the easternmost stopped short of the site of E. Allen's house, which no longer existed. Consequently, this road simply looped to join the road out of the study area in the north-west. Thus, the road network reacted to the concentration of settlement around Meeker.

In Baca watercourses also shaped the major routes (Figure 4). East-west routes follow the Horse and Bear Creeks and the Cimarron. In both cases they split into a complex network towards the east. A number of north-south routes join those along streams. Two head north from the Horse Creek, another joins a stream in the west to the route along the Bear Creek, and a third connects the Cimarron and the Bear Creek. Most houses are served by roads, while the fort is at the convergence of several roads on the Cimarron.[69]

The USGS shows a dramatically different road network (Figure 4). The clearest differences are two blocks of straight roads with right-angled turns in the center and north of the study area. These areas contained more patented land than the gap between them. The northern block replaced east-west routes along the Bear and Horse Creeks on the PLSS and therefore is partly a rearrangement of

[69]https://glorecords.blm.gov/details/survey/default.aspx?dm_id=170704&sid=rcbcs13j.1aa&surveyDetailsTabIndex=1 accessed December 31, 2018.

the roads to accommodate the PLSS grid. Indeed, two roads do pass east-west across the entire study area at this point allowing long-distance east-west travel to continue. The southern block had no roads on the PLSS but did contain isolated houses and so must have had tracks which were not mapped. None of its roads pass east-west through the entire study area. They are therefore purely local routes serving farms.

Another prominent feature is the Texas Trail which takes a sinuous route north-south across the study area. One section in the north approximates a road on the PLSS as does a section in the center. These roads do not join on the PLSS but this is probably an omission by the surveyor. In the south of the study area the route is clearly different from the PLSS. On the USGS it heads nearly due south crossing the Cimarron and the roads along it. On the PLSS it curves west to join the roads along the Cimarron near a cabin and the fort, then east again to rejoin the USGS route at the state line. It is probable that the fort and cabin had become less important stopping points for travelers by the 1890s.

Aside from the Texas Trail, roads near the Cimarron remained relatively unchanged. Most of the larger east-west roads of the PLSS are on the USGS, and were not straightened to align with the PLSS grid. The most significant change was the addition of a road north into the southern of the two straight road networks and the redirection of a former part of the Texas Trail into this same network. The latter is convenient for the Miles Ranch while the former possibly served a cabin which was abandoned before the USGS. Finally, a straight road joined two branches of the trails along the Cimarron near the Kansas state line. This leads almost directly to the site of a ranch on the PLSS.

In the north of the study area the roads are also sinuous. The end of the Texas Trail has already been discussed. Another north-south road on the PLSS also survives on the USGS. Several other sinuous roads running approximately north-south are also marked in this area on the USGS.

The changes in Baca are more dramatic than in Rio Blanco. The Texas Trail changed as a result of changes in the provision of services along the Cimarron. Where ownership, but not actual

settlement, was most intensive dense networks of local roads formed. Older roads were used to link these networks, occasionally being redirected to do so. In some cases, specific houses, even those which were short-lived, caused the road network to develop in particular directions.

Rio Grande has similarities with both Baca and Rio Blanco. On the USGS the clearest pattern is the division between the east and south-west of the study area (Figure 6). The east contains straight roads with right-angled corners. None of the PLSS roads survived in this area (Figure 5). The roads all stop short of the river leaving a roadless corridor around it. The northern edge of this corridor is one of the roads mapped by the PLSS. The road itself is not present on the USGS but must have existed when the angular roads were built because they respect its course. It is likely that it became obsolete when the railroad was built.

The area in the south-west is bounded by a road along the south bank of the Rio Grande, which turned south in the center of the study area to follow the edge of the hills. On the USGS this road survives in sections, most straightened, until just after its southern turn where it disappears in the area of angular roads. To the south and west of the former course of this road the USGS shows a network of sinuous tracks. Nearly every track marked on the PLSS is on the USGS. The PLSS road network may be particularly incomplete in this area as this would have been a challenging place to map. It is likely therefore that the roads in this area remained nearly unchanged between the PLSS and the USGS.

The development of the road network around the Rio Grande is related to the pattern of patenting and settlement. The angular roads to the east coincide with the densest patents and settlements. The older road network to the west is in an area of less intensive settlement and patenting. Patents made in the west were earlier, of less regular shapes to later ones, and may relate to different land use.

The final topic, fences and ditches, are features connected with agriculture and are less well mapped by the USGS and the PLSS. Several ditches are marked on the Rio Blanco PLSS (Figure 7), but only as

short sections. Most were around Meeker. One runs through Meeker and continues towards Powell's Park. Two other ditches were marked at the eastern study area boundary south of Meeker. North of Meeker, a ditch followed Sulphur Creek. The head of this ditch was patented in 1891 and a house built near it. Another house is marked at the end of the ditch. The USGS marks all but the ditch on Sulphur Creek. The Meeker USGS quad does not label ditches and so they can only be identified by their shape and relationship to topography. Two were marked to the south of Meeker which were not on the PLSS and may represent extension of the system (Figure 7). The ditch which runs through Meeker was also extended via two channels north to serve a group of houses. Some relatively late patents cluster on the end of this extension. To the west very few ditches were marked on either map. The PLSS marks three small sections of ditch in Powell's Park none of which are on the USGS.

It is remarkable that the ditch system mapped by the PLSS is so extensive only shortly after the area was opened to settlement. The fact that the largest ditch runs through Meeker may imply that the promoters of Meeker built the ditch system. The ditches to the south and north of Meeker may have been part of this system or may have been built by farmers. The two ditches in Powell's Park may have been made by the Ute Agency but may be later.

The PLSS also marks some fences (Figure 7). Only short lengths are marked so it is clear that this mapping is incomplete. The fences have a similar distribution to the ditches and settlements; in that they are in the east of the study area around Meeker. Nearly all fences are parallel to section and township boundaries, and in six cases coincide with boundaries of lots. Only two fences are at an angle to the grid system; both parallel to streams or rivers. This suggests that the people who built the fences knew where the grid lines would go, probably by extrapolating from neighboring townships which were surveyed earlier. Most fences are labelled with a personal name, in two cases that of a patentee of land adjacent to the fence. Many fences are near to fields or meadows. In one case, 'Burgett's meadow', the area was patented by a man named Burgett or Burett. At Hughe's

ranch two lengths of fence enclose a meadow. Consequently, it appears that fences were primarily used to enclose particular resources not entire farms or ranches.

At Rio Grande both the USGS and PLSS show extensive ditch systems (Figures 8 and 9). The PLSS ditches cluster around Del Norte and the head of the Pinos Creek, and so reflect the settlement pattern. As at Rio Blanco, the PLSS only marks part of the system. The PLSS ditches are quite sinuous, so it has not been possible to identify any of them positively on the USGS; however, in most cases the PLSS ditches are close to USGS watercourses. The only PLSS ditch which is certainly absent from the USGS is one to the south of Fourmile school which was marked 'old ditch' on the PLSS and so was probably disused already. This had probably served the plazas in this area.

The USGS also marks a very extensive system of straight ditches east of Del Norte. This is based on the Citizen's Ditch and Empire Canal which were part of T.C. Henry's real-estate project, financed by the Travelers' Insurance Company. When Henry fell into financial difficulty his lands and canals became property of Travelers' who continued to invest.[70] The Travelers' Canal is probably named for this firm. Nearby the Farmers' Union Ditch provides the basis for another very regular ditch system which extends beyond the study area. This ditch was a cooperative effort by residents.[71] Laterals from the main ditch served agricultural land and ran exactly halfway between the roads. They supported a cluster of very late nineteenth-century patents.

Neither survey marked ditches or fences in Baca. This is surprising as agriculture would have been almost impossible without ditches, and may imply that much of the patenting in this area was for dry-farming.

The processes described above made the landscape into a complex palimpsest with distinctive zones containing different suites of features. This great variation within a relatively small area gives

[70] McConnell-Simmons *The San Luis Valley*, 228.
[71] McConnell-Simmons *The San Luis Valley*, 230.

landscape its value as an historical source. To understand this better we must draw together the separate themes we have considered above.

In Baca the landscape in the center of the study area is clearly different to that north and south (Figure 4). It has a dense pattern of short straight roads which follow the boundaries of patented land, and contains only nucleated settlements. At the time of the PLSS this area contained some ranches and settlement, especially along the Horse and Bear Creeks, and had few roads. Much land was patented in this area. To the south another zone is apparent. This contains three ranches; two on its edge and one on the Cimarron. The latter was on the PLSS. The road network is particularly sinuous and mostly shown on the PLSS. Patents other than along the river are rare. This probably represents a continuation of open-range ranching, albeit with some consolidation, whereas the middle zone is probably agricultural. In the north the roads are again sinuous but are not so clearly related to the PLSS roads. The USGS marks no settlement here though one ranch was on the PLSS. Patenting was rare in this area, perhaps suggesting that ranching declined but not replaced.

Rio Grande also has recognizable zones. The clearest is the area of dense dispersed settlement, short straight roads, and intensive irrigation in the east (Figure 6). This had been quite empty but became densely settled after the PLSS. It contrasts with the hilly area to the south and west. This had limited dispersed settlement and sinuous roads on both PLSS and USGS. So, there was continuity of landscape and probably land use from the PLSS-era in this area. The banks of the Rio Grande and its larger tributaries form a third zone, where roads are straight but strongly influenced by the alignment of the river, and which contains both nucleated and dispersed settlement. This also reflects a broad continuity in the general direction of transport routes and settlement types. While these zones are distinct, they interacted as the zone around the river provided the means of marketing the products of the others.

In Rio Blanco the pattern of zones is similar to Rio Grande. In the north a sinuous road network and light, dispersed settlement pattern continued from the PLSS to the USGS. The flatter area south of

Meeker had a denser dispersed settlement pattern, irrigation, and straight local roads which developed after the PLSS.

While these zones are distinct, they were not self-contained and were strongly influenced by long-distance transportation routes and central places. Our case studies add detail to the established understanding of the importance of these elements.[72] The dataset also allows us to trace the development of earlier transport systems into later forms. Myhrer has proposed a model for this in which earlier transport networks provide connecting roads to the new route during exploration and construction while sub-centers develop between places of origin and destination to serve first construction workers then travelers.[73] Significant routes usually develop in corridors containing evidence of multiple phases.[74]

At Baca there is no clear central place within the study area but several roads lead to central places outside it. The earliest is probably that along the Cimarron which was part of the Cimarron Cutoff on the Santa Fe Trail. This is probably the reason for the fort, which would have acted as a sub-center. This route was already obsolete by the PLSS period and had been adapted to suit current needs. The tracks along the Cimarron had been turned north to create the Texas Trail, which continued through the study area and joined routes east and west on the Arkansas. Here the use of earlier routes during the formation of new ones is clear, though the earlier connecting roads were not abandoned as in Myhrer's model and may have been kept because of the convenience of the fort.[75] It is also possible that here we see a limit of Myhrer's model which was principally intended for planned routes while those examined here probably developed less formally.[76] The name of this route and the fact that it could cross the Oklahoma Panhandle into Texas, implies that it is connected with

[72] e.g. M. Conzen, "A Transport Interpretation of the Growth of Urban Regions: An American Example," *Journal of Historical Geography* 1 (1975): 361–82.
[73] Myhrer, K. 'Viewing Transportation Features in Time and Space: a Regional Historic Transportation Systems Model' *Nevada Archaeologist*, 11, 1-17.
[74] Myhrer, 2
[75] Myhrer, 3.
[76] Myhrer, 1.

trailing Texan cattle north to supply miners, the Army and Indian Agents around Denver and elsewhere in the state. If so, this shows how a change in the center of gravity of the regional economy influenced the landscape. This is likely also the reason for the development of ranches recorded by the PLSS. The PLSS also marks east-west routes along the Bear and Horse Creeks which may have led to the Acheson, Topeka and Santa Fe Railroad at Syracuse before it reached Colorado in the mid-1870s. These could be for marketing either cattle or crops. The USGS map shows that, while it remained possible to travel east-west through the study area northern routes probably became more important for long-distance travel. By this time the landscape had had time to adapt to the railroad running to its north along the Arkansas so that roads now reflected the importance of Lamar for marketing all types of produce. This railroad would have given equally good transport either east or west, and seems to have eclipsed the corridors present in the earlier landscape so that this later phase of transport infrastructure is not represented in the study area.

Rio Grande has a central place at Del Norte. Del Norte had benefitted from being on the main route to the San Juan mines.[77] Consequently, it had grown from supplying goods to the mines before developing central place functions. The importance of the route to Leadville declined after railroads were built south of Leadville, but the arrival of the Denver and Rio Grande at Del Norte allowed it to survive.[78] It thus represents a much clearer example of Myhrer's transport corridor model than did Baca.[79] Other towns were also strongly related to transport. Piedra is on the road to Conejos and La Jara. The former had been the principal trading center until it was bypassed by the railroad which favored the latter.[80] Venable was a stagecoach stop, while Lariat/Monte Vista developed because of the railroad. These therefore acted as sub-centers during different phases of development. The PLSS had, optimistically, marked the road along Los Pinos creek 'road from Summit to Del Norte', but in

[77] C.E. Kindquist, "Communication in the Colorado High Country," in *The Mountainous West: Explorations in Historical Geography*, eds. W. Wyckoff and L.M. Dilsaver (Lincoln: University of Nebraska Press, 1995), 114, 127.
[78] T.J. Noel, P.F. Mahoney, and R.E. Stevens, *Historical Atlas of Colorado* (Norman: University of Oklahoma Press, 1994), 28; Kindquist, "Communication in the Colorado High Country," 117.
[79] Myhrer 'Viewing Transportation Features in Time and Space'
[80] McConnell-Simmons, *The San Luis Valley*, 279, 289.

the event the Summitville mining district was never as successful as others and so while farms and ranches thrived on this road no town developed.[81] By the USGS the section of this road south of the houses had become a track. These changes occurred because the destination and origin points changed removing the relevance of particular corridors.[82]

At Rio Blanco, Meeker was the central place but shared some functions with Rifle to the south. Meeker is on a trail which originally passed the Ute Agency site and is probably Ute in origin. A trail to the south is marked 'Old Ute Trail' on the PLSS and several tracks meet it from both north and south. These trails form part of a system depicted on the Hayden maps of 1874-6. They mark the Old Agency Site at Agency Park east of the case study area, where it was before being moved to Powell's Park. On the Hayden plans the tracks converge on the Old Agency and were clearly made by Utes traveling there. One route to the Old Agency is shown as a road on the Hayden map and links to Berthoud's Wagon Road near modern Craig. It may have been improved by the Agency staff. Of these trails one running east-west through the study area appears to be the most significant as other trails end at it. On the Hayden maps this trail turns south to join the roads into the agency but probably originally joined a trail which leads east from the other side of the Agency into North Park; an important Ute hunting-ground. This trail likely predates the Reservation. The Old Agency was probably sited where it was because of easy accessibility from a major trail and it is likely that Nathan Meeker also considered the proximity of this trail when selecting Powell's Park. The Hayden maps also show a number of trails converging on Powell's Park which provides good pasture near the river and would have made an obvious camping site on journeys to North Park. Indeed, Powell's Park was an important grazing resource when the Agency moved there and was one of the reasons for the subsequent conflict.[83] The move resulted in some changes, for instance, a trail which led up the Flag Creek had curved east to reach the Old Agency on the Hayden map but continued all the

[81] J. Dietz and A. Larson, "Colorado's San Luis Valley", in eds. W. Wyckoff and L.M. Dilsaver (Lincoln: University of Nebraska Press, 1995), 357.
[82] Myhrer 'Viewing Transportation Features in Time and Space', 2-3.
[83] Sprague, *Massacre*, 174–76.

way to the White River on the PLSS to reach the new Agency. The section that curved towards the Old Agency is that marked 'Old Ute Trail' indicating that it was now less well-used. After the Utes were exiled from Colorado in 1881 the trails remained. Utes commonly hunted in the area after having been expelled and will have continued to use these trails, but their continuing impact on their development is unclear.[84] Myhrer's model does not clearly consider such extensive use of Native American routes in shaping the Anglo-American transport network, and again the routes here probably developed in a more piecemeal fashion than the roads discussed by Myhrer.

It is likely that the convergence of trails and the presence of the major east-west trail partly determined the location of Meeker. The east-west trail joined a road north to the Berthoud Wagon Road. Not only was this a major road in its own right, but connected to the proposed route of the Colorado Western Railroad at Hermitage.[85] Taken together these features would have made Meeker an apparently attractive town site. In the event the Colorado Western Railroad was not built and no railroad reached the area until 1928.[86] Consequently, Rifle, on the Denver and Rio Grande Railroad, became the main shipping point. Rifle was at the head of the Old Ute Trail south of our study area. A second trail to Rifle from Powell's Park had been built by the time of the PLSS. It is interesting that Meeker survived the failure of the Colorado Western Railroad but it may have been saved by its access to Rifle and its status as county seat.

Overall, while much of Myhrer's model applies to the routes examined here, our dataset, because it is not focused on a single corridor, allows us to show how different transport corridors interacted and often superseded one another as places of destination and origin changed. It has also highlights the importance of less formal, shorter distance routeways.

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[84] C. Martin, R. Ott, and N. Darnell, *Colorado Wickiup Project Volume I: Context, Data Assessment and Strategic Planning* (Grand Junction: Dominguez Archaeological Group, 2005), 9.
[85] Hayden, "*North-Western Colorado and Part of Utah.*
[86] Noel *et al.*, *Historical Atlas of Colorado*, 29.

The development of irrigation in Rio Blanco and Rio Grande highlights some of the differences between these two areas and shows how this process can vary regionally despite often being discussed on a statewide scale.[87] Both areas have similar systems of pioneer ditches which, like those elsewhere, water bottom-lands and would have required relatively little capital.[88] It is likely that these are a mixture of private and mutual ditches though it is not possible to be certain. The period which we are examining encompasses a major expansion of irrigated acreage in Colorado, encouraged by new legislation which established appropriation procedures and appointed a state engineer. This was fueled by investment by Easterners and Europeans.[89] At Rio Blanco the only ditch likely to represent significant outside investment is that associated with the Meeker townsite, and while the ditch network did expand between the USGS and PLSS periods it did not change dramatically, and depended upon the earlier system. The major expansion at Rio Grande was conversely the result of investment by T.C. Henry and the Travelers' Insurance Company. This produced a much larger and very different irrigation system to that which went before. This is visually apparent in the much more straight and regular form of the ditches. Nonetheless, even this incorporated earlier systems.[90]

We have seen that there is ample evidence in the landscape to be 'read' by Western historians. How does this evidence to shed light on important topics for Western History? A number of specific observations made above point to topics which may require reassessment in light of examination of the landscape.

The relationship between houses and patented lots in particular areas of Rio Grande and Rio Blanco is a case in point. On the flat bottom lands immediately south of Meeker in Rio Blanco and on the late-irrigated lands in the east of Rio Grande, most patented lots contained a single building on the

[87] e.g. M. Holleran, *Historic Context for Irrigation and Water Supply Ditches and Canals in Colorado* (Denver: Colorado Centre for Preservation Research, 2005).
[88] Holleran, 12.
[89] Holleran, 22-24.
[90] McConnell-Simmons *The San Luis Valley*, 228.

USGS (Figures 5 and 6). Probably such flat, well irrigated land was being worked by genuine small farmers as the land laws intended.[91] Where these lots were claimed under Homestead or Pre-emption laws the house would have constituted an improvement towards the legal requirements. It was easy for prospective patentees to evade these requirements because they were assessed through sworn affidavit of their neighbors, who might swear false affidavits reciprocally.[92] Most discussions of the land law dwell on these evasions which were certainly common.[93] Improvement conditions did not apply to purchased land but it was nonetheless the Federal government's intention that such land would be used by small farmers.[94] This suggests a spatial element to land law subversion. It seems that, on the best arable land, laws were obeyed in spirit and perhaps to the letter, whereas in more forbidding areas subversion was necessary. Obedience to the land law resulted in a particular settlement density. These landscapes of obedience were settled in the early 1890s probably due to the dry-farming boom and so obedience was also temporally restricted. These temporal and spatial aspects sit alongside ethnic factors identified by Church.[95]

The intensity of settlement in the Baca case study is also interesting, as early European settlement on the Colorado Plains is typically thought to have focused nearly exclusively on the Arkansas and Platte.[96] At Baca however, substantial European settlement is recorded on the early 1880s PLSS. It is not possible on the basis of the evidence examined here to be precise about how new this was when the maps were drawn, but the fact that the Adobe Fort had been there long enough to have become disused suggests that settlement here were not brand-new. It is unlikely that settlement outside the Arkansas and Platte valleys was ever as significant as that within them, but the data presented here suggest that the restriction of settlement in 19th century Colorado has been somewhat overstated.

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[91] P.W. Gates, *Landlords and Tenants on the Prairie Frontier* (Ithaca: Cornell University Press, 1973), 140–48.
[92] E.N. Dick, *The Lure of the Land: a Social History of the Public Lands from the Articles of Confederation to the New Deal* (Lincoln: Univ of Nebraska Press, 1970), 139.
[93] e.g. Opie, *The Law of the Land*; Gates, *Landlords and Tenants on the Prairie Frontier*.
[94] Gates, *Landlords and Tenants on the Prairie Frontier*, 140–48.
[95] Church, "The Grant and the Grid"
[96] E. Cotton Mather, "The American Great Plains" *Annals of the Association of American Geographers* 62, no. 2 (1972): 241; Wyckoff, *Creating Colorado*, 54.

The importance of local roads is also notable. They represent a significant investment in their construction and sacrifice of agricultural land. In Rio Blanco, where bridges were necessary to cross the White River, the investment was even greater. They were essential for dispersed farms, which were built away from the major transport corridors from the late 1880s. Consequently, the network tended to be densest in the areas which were intensively patented in this period, on the San Luis Valley, immediately south of Meeker and around the Horse and Bear Creeks. These roads made a major impact on the landscape; contributing strongly to the character of landscape zones in all three areas. Their main function was to allow access to the long-distance routes and thus central places. They also link different landscape zones and thus elements of the local economy. While long distance transport is acknowledged as extremely important in Western history, historians have tended to overlook travel on a local scale. Such investment in local roads, however, suggests that contemporary Westerners realized their importance.

The significance of landscape is, however, not restricted to isolated themes because landscape played a role in structuring the experiences, communities and lifeways of 19th century Westerners. For example, nucleated and dispersed settlements were used in different parts of the landscapes studied. The experience of living in a small nucleated settlement in Baca would have been very different to living in a dispersed settlement in the mountains north of Meeker, which was different again to living in the dense but dispersed farms in the bottom land south of Meeker or east of Del Norte. Memoirs of homesteaders often spoke of loneliness or the fear of loneliness,[97] but this cannot have been universal. In the case of areas of dense dispersed settlements, community seems to have formed sufficiently to allow cooperation in road-building and irrigation. Such communities are too localized simply to result from people using the same central place, and did not include those living in the nearby hills despite the fact that they would have used the same town. Conversely, people from different zones of the landscape will have interacted via central places

[97] e.g. M.M. Hensley, *Staking Her Claim: Women Homesteading the West* (Glendo: High Plains Press, 2008).

economically and perhaps socially; we might speculate about the possibility of a 'second order' community across landscape zones.

The landscape also demonstrates a level of continuity in Western history which is sometimes forgotten. It is common to think of Western history in terms of sudden change as a result of particular events whether national, such as a cyclical panic, or regional such as the construction of a railroad. For instance, many scholars have suggested that settlement occurred in pulses and retreats,[98] while Worster postulated periods of economic intensification followed by consolidation or regress.[99] Such interpretations are not wrong, but the landscape shows there was continuity between such episodes. Each period built upon the landscape of those that went before. We have seen that routes associated with the Santa Fe trade in Baca and the pre-Reservation Ute occupation of Rio Blanco structured these landscapes through the whole 19th century despite their original uses having long ended. Similarly, the establishment of Meeker was a major change in the character of the area economically, socially and aesthetically, but built on the existing landscape of trails and irrigation ditches of the Ute Reservation. Rio Blanco also exhibits continuity in the relationship between USGS buildings and PLSS roads; while the roads had been rebuilt following the imposition of the grid system people left their homes on their earlier sites. At Rio Grande, with its older settlement, much of the pre-PLSS structure of the landscape was retained until the early 20th century. The tracks and general settlement pattern remained the same in the hills to the south and the largest settlements and most important routeways were always along the Rio Grande River. It is also notable that Rio Grande had the most extensive system of irrigation of the three case studies. It had a long tradition of irrigation going back to the 1840s, which left a legacy for later settlers to build upon. Finally, at Baca the greatest continuity is the landscape of the southern part of the case study.

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[98] C.M. Davis, "Changes in Land Utilization on the Plateau of Northwestern Colorado," *Economic Geography* 18, no. 4 (1942): 349; R.D. Wishart, "Settling the Great Plains, 1850-1930: Prospects and Problems," in *North America: The Historical Geography of a Changing Continent*, ed. R.D. Mitchell and P.A. Groves (Totowa: Rowman & Littlefield, 1990), 255; A.G. Bogue, "An Agricultural Empire," in *The Oxford History of the American West*, eds. C.A. Milner, C.A. O'Connor, and M.A. Sandweiss (Oxford: Oxford University Press, 1994), 287.
[99] D. Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (Oxford: Oxford University Press, 1985), 64.

Here, a landscape of ranches and long sinuous trails continued to the turn of the century despite changes immediately north. Indeed, the Miles Ranch existed at the time of the PLSS. A few instances of continuity have been identified by other Western Historians. For instance, White noted that white settlers took over Osage fields in Kansas in 1854, and Sherow that the Fort Lyons Canal Company purchased an irrigation ditch dug for the Cheyenne and Arapaho from the Bureau of Indian Affairs.[100] Seen in isolation these do not necessarily appear significant but when the landscape is considered as a whole continuity seems more common. Probably this is because new arrivals drew on features already present and so the landscape itself preserved its history.

These three case studies have demonstrated the great variation present even within very small parts of the West. This variation means that the landscape has great potential as a source. This has been explored and some subjects that could be addressed using the landscape suggested. Future studies should consider not only the sources examined here but other items as well. Intensive study of the vernacular architecture of the study areas is beyond the scope of the present paper but would add much to the conclusions drawn here, as would a detailed examination of court records regarding water right adjudications. Finally, the landscape, as the setting for Western history, can inform our understanding of the experience of 19th century Westerners and their lives. For these reasons it should attract our attention.

[100] White, *It's Your Misfortune and None of My Own* 514–15; J.E. Sherow, "Utopia, Reality, and Irrigation: the Plight of the Fort Lyon Canal Company in the Arkansas River Valley," *The Western Historical Quarterly* 20, no. 2 (1989): 168.

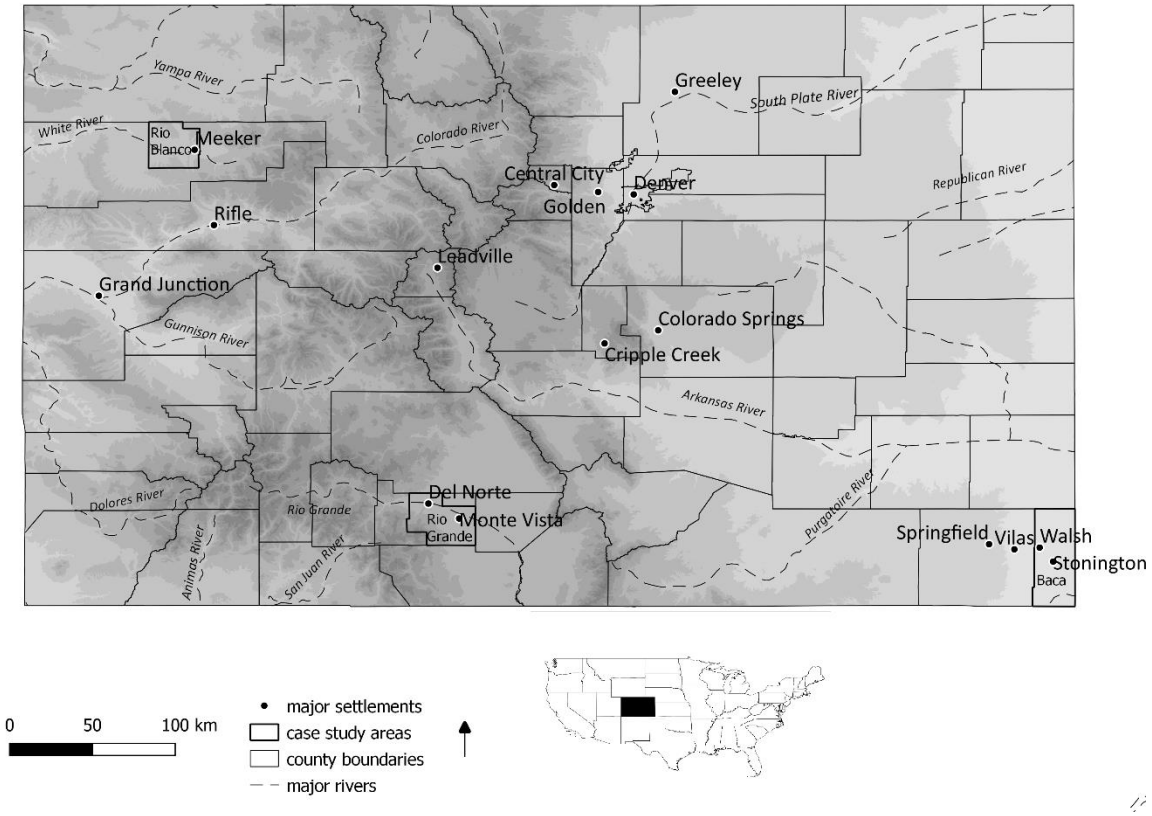

Figure 1 The locations of the three case study areas in the State of Colorado. Note that each occupies a very different physical landscape to the others.

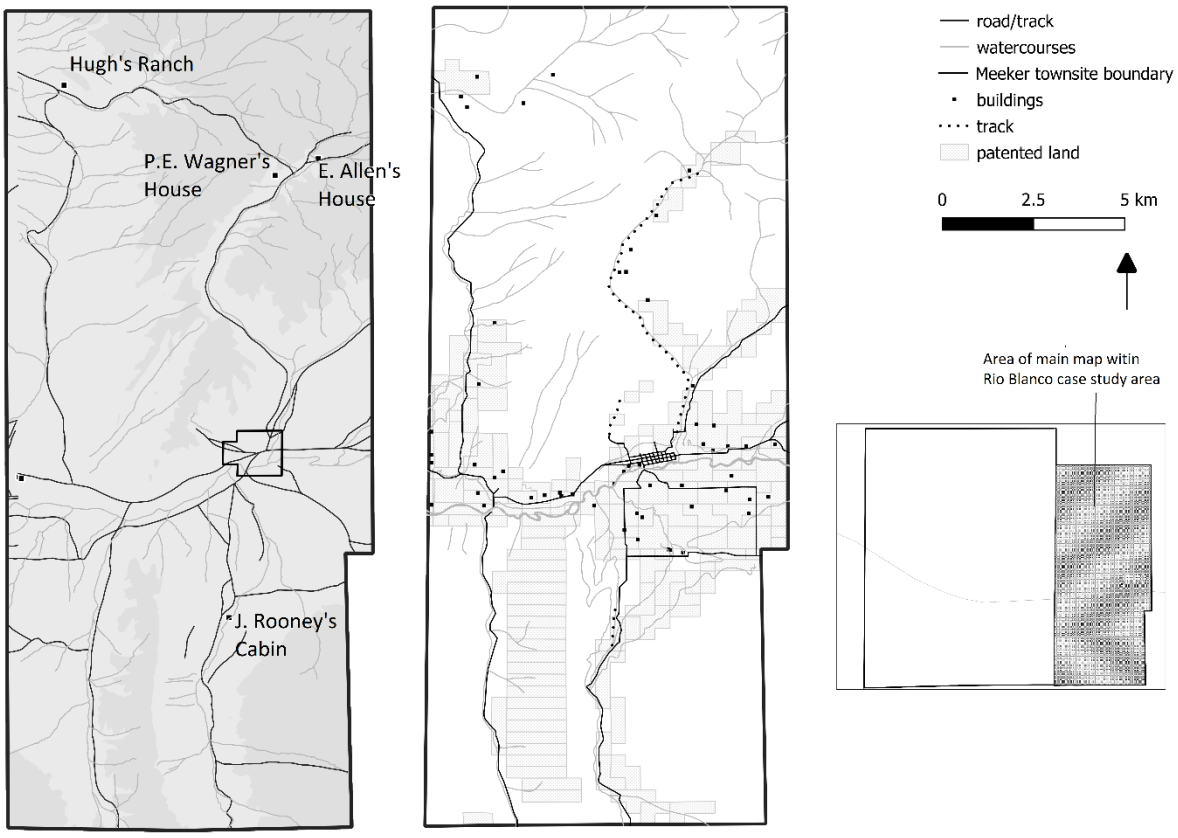

Figure 2 The eastern part of the Rio Blanco case study area based on the 1880s PLSS plats (left) and the USGS Topo maps of 1907-1912 (right). Topography is depicted on the left by shading while patented land is shown on the right.

Figure 3 The area to the south of Meeker based on the USGS Topo maps with the PLSS tracks and patented land boundaries overlain.

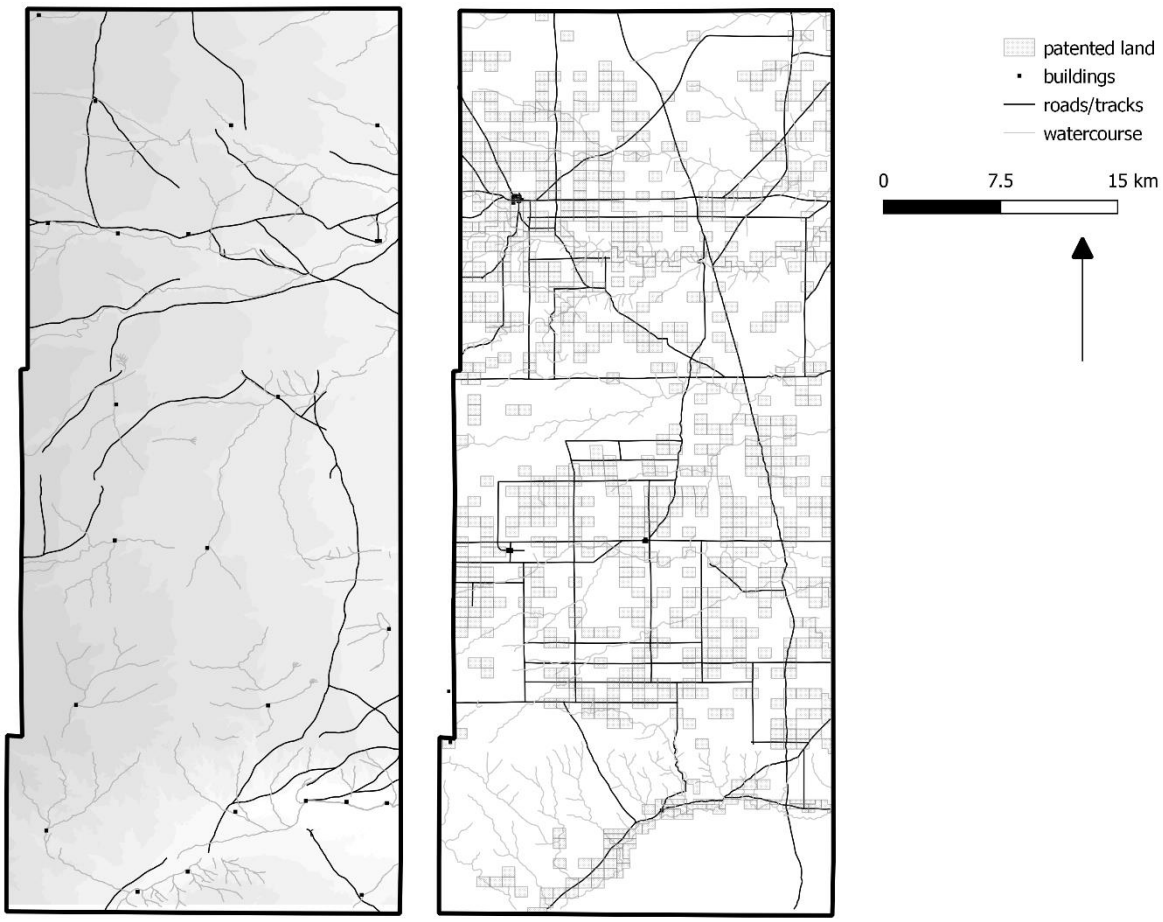

Figure 4 The Baca case study area based on the PLSS 1880s plats (left) and the USGS Topo maps of 1892-3 (right). Topography is depicted on the left by shading while patented land is shown on the right.

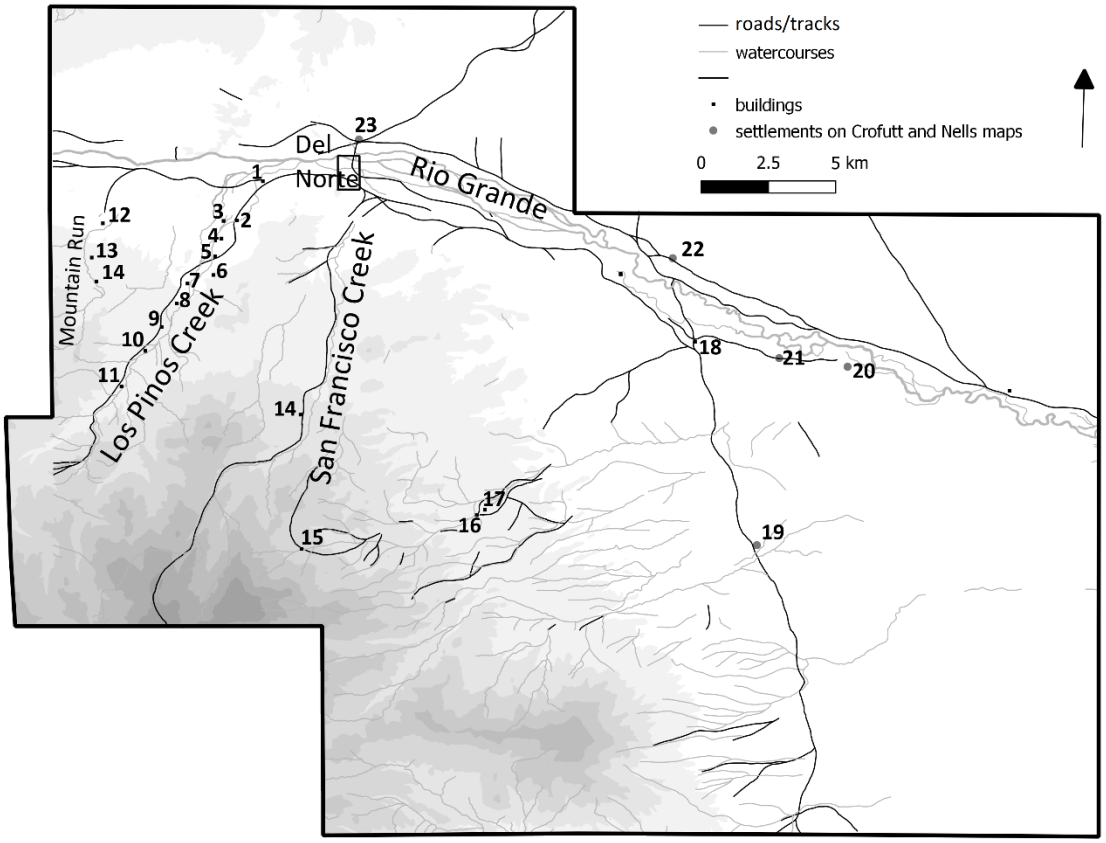

Figure 5 The Rio Grande case study area based on the 1870s-80s PLSS plats with topography shown by shading.

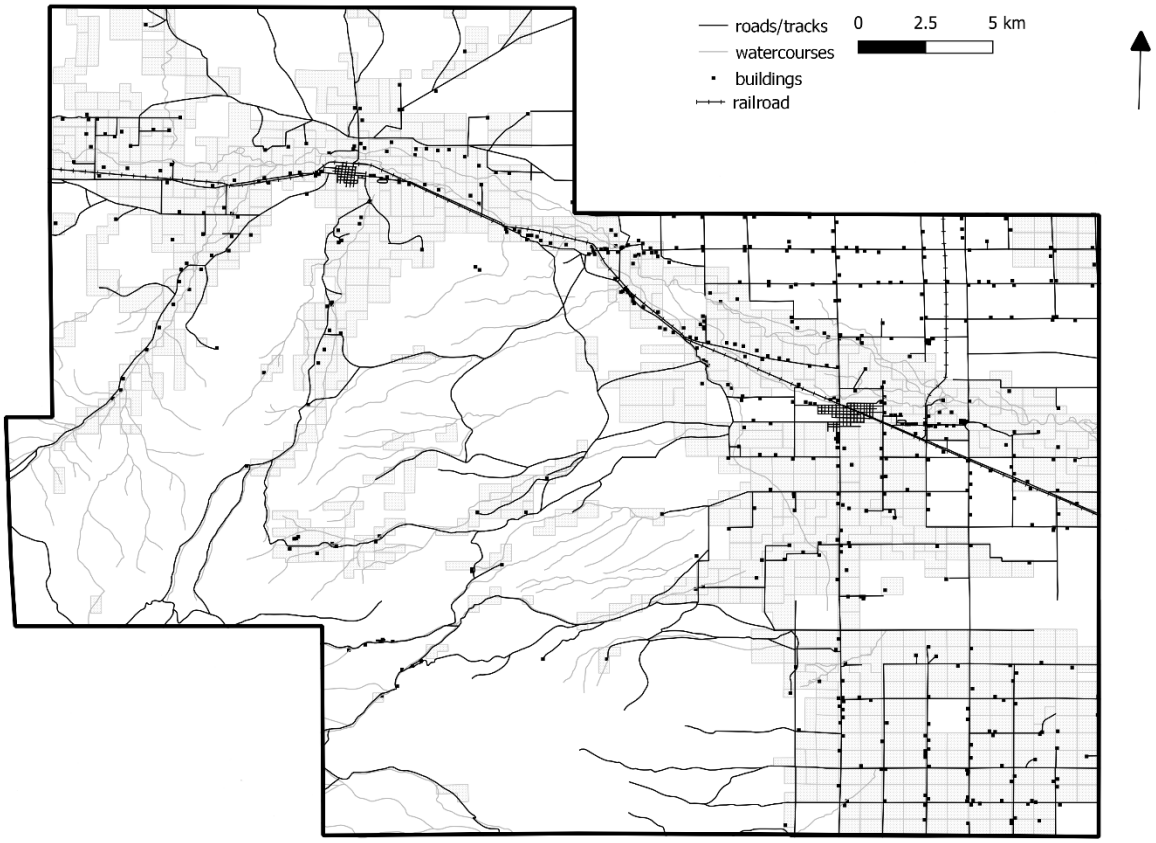

Figure 6 The Rio Grande study area based on the USGS Topo maps of 1915-1922 with the boundaries of patented land overlain.

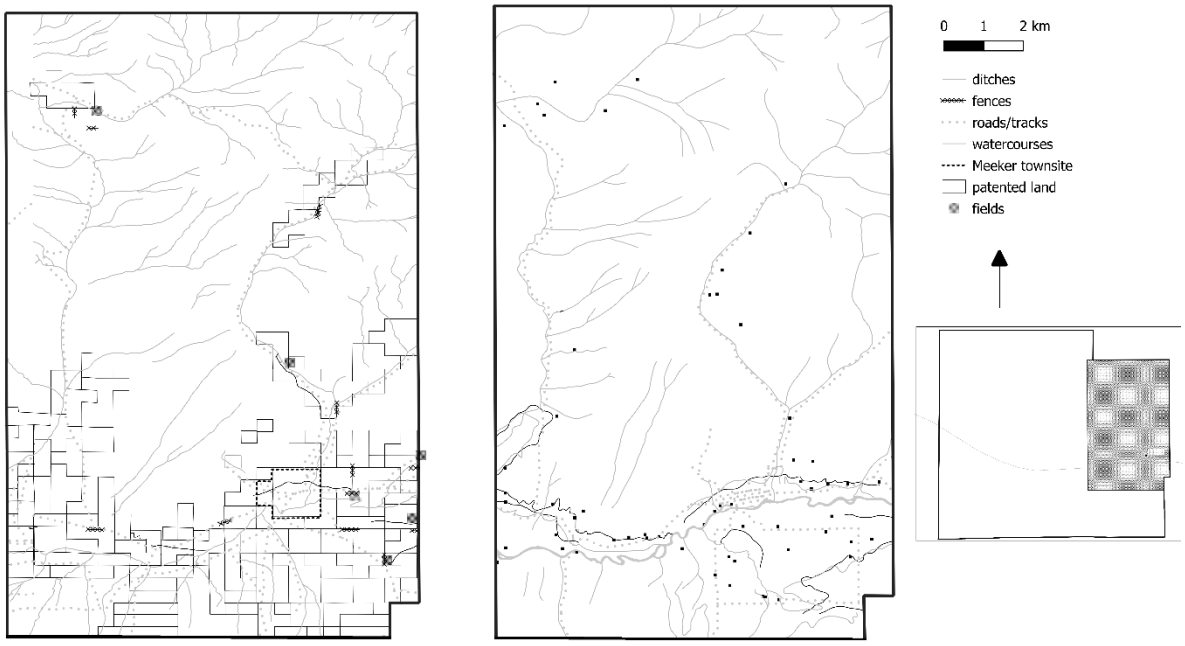

Figure 7 The eastern part of the Rio Blanco case study area based on the 1880s PLSS plats (left) and the USGS Topo maps of 1907-1912 (right). Ditches, fences and fields have been emphasized.

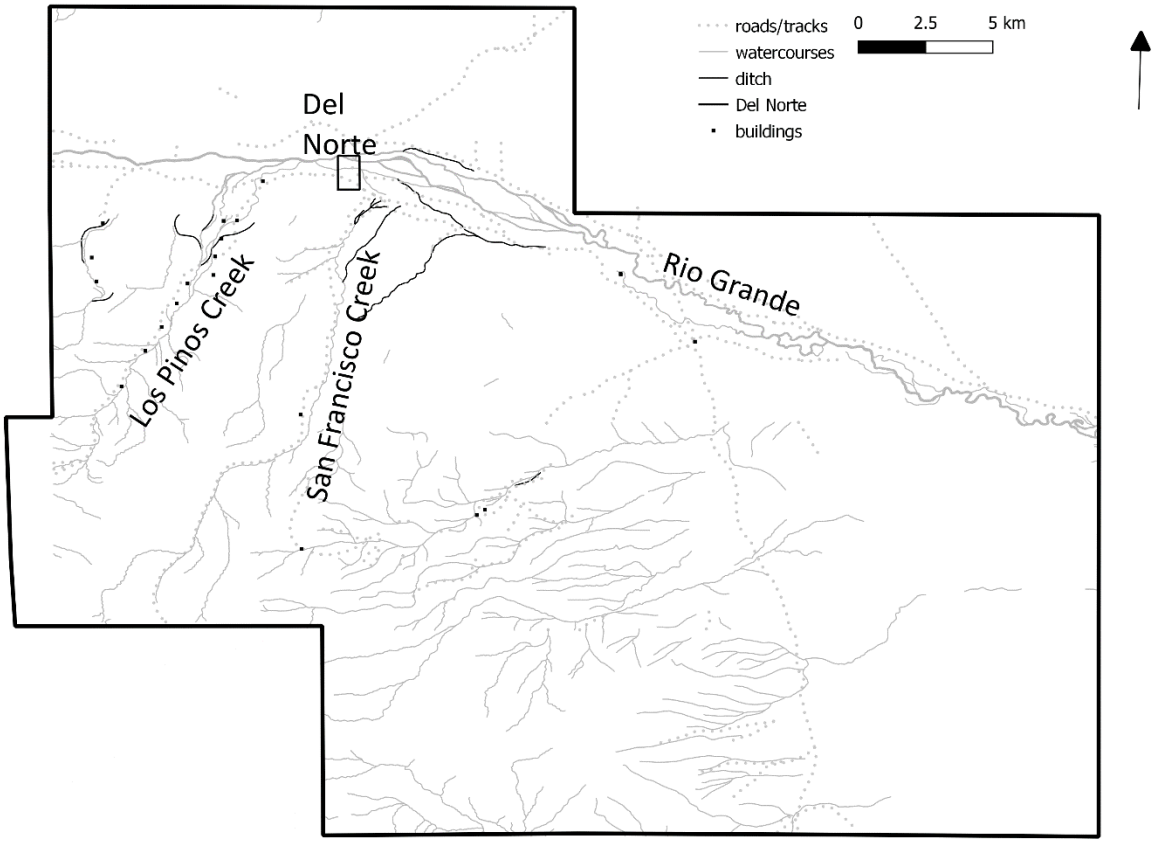

Figure 8 The Rio Grande case study area based on the 1870s-80s PLSS plats with the ditches emphasized.

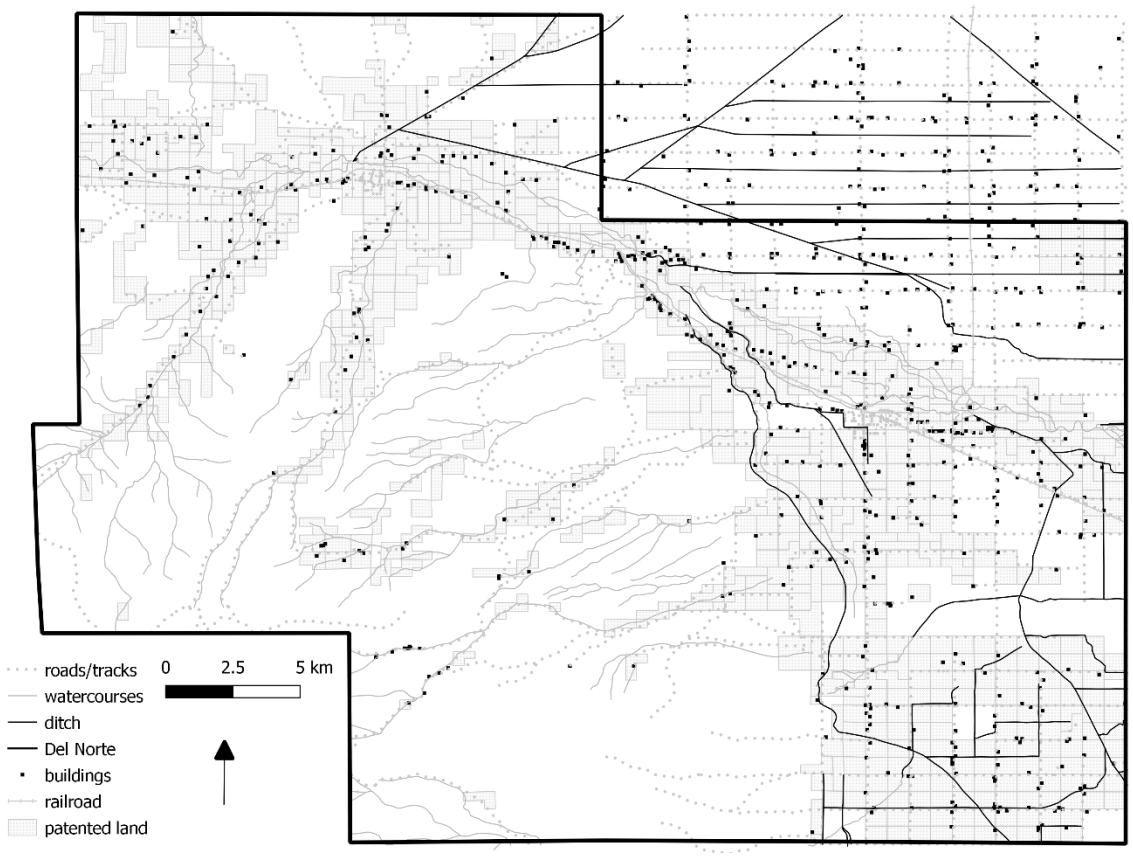

Figure 9 The Rio Grande study area based on the USGS Topo maps of 1915-1922 with the boundaries of patented land overlain and ditches emphasized.